NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

OH-ENG-234a
03/00

COMPOSTING DESIGN WORKSHEET
FOR WINDROWS

Landowner:		County:	
Designer:	Date:	Checked:	Date:

1. Calculate primary & secondary composting cycle times as a function of the design weight (see tables 1-3):

Primary cycle time (T_1) = 5.0 x $\sqrt{}$(_____) =_____ Days
Design Weight (W_1, largest animal anticipated) (10 day min)

Secondary cycle time (T_2) = 1/3 x _____ = _____ Days
(Primary cycle time) (10 day min)

1. Calculate Primary, Secondary & Storage Volumes (or use Tables 1 through 3):

Primary Volume = 0.2 x _____ x _____=_____cu ft
lbs. Loss / Day (ADL) Primary Cycle Time (T_1)

Secondary Volume = 0.2 x _____ x _____ =_____cu ft
lbs. Loss / Day (ADL) Secondary Cycle Time (T_2)

Storage Volume = 0.2 x _____ x 30 days (T_3) =_____cu ft
lbs. Loss / Day (ADL)

Alternate: (use with large animals), W_1 = weight of largest animal

Primary Volume = 0.2 x W_1 (lbs.) x Integer (ADL * T_1/ W_1) =_____cu ft

Secondary Volume = 0.2 x W_1 (lbs.) x Integer (ADL * T_2/ W_1) =_____cu ft

Storage Volume = 0.2 x W_1 (lbs.) x Integer (ADL * T_3/ W_1) =_____cu ft

2. Indicate the windrow height and resulting windrow area used.

Assume a windrow height of 7 ft. and continue. Windrow Height =_____ ft
Windrow Section area and base width assume 1 ft. top width and 1:1 side slopes

Windrow Height (ft)	Windrow Section Area (sq. ft.)	Windrow Base Width (ft)	Pad Width (ft)
5	30	11	52
6	42	13	56
7	56	15	60

3. Calculate the length of the Primary, Secondary and Storage windrows. **The Design Windrow Length is longer of the primary windrow length or sum of the secondary and storage windrow lengths. Then calculate the pad length.

Primary Windrow Length = (_____)/(_____) = _____ ft
(Primary Volume; Primary Windrow Area; nearest ft.)

If the composting windrow length is less than twice the windrow height, reduce the height and go back to step 2. This indicates the composting configuration will be a compost pile versus a windrow.

Secondary Windrow Length = (_____) / (_____) = _____ ft
(Secondary Volume; Primary Windrow Area; nearest ft.)

Storage Windrow Length = (_____) / (_____) = _____ ft
(Storage Volume; Primary Windrow Area; nearest ft.)

Pad Length = **Design Windrow Length + 10 ft. = _____ ft (nearest ft.)

4. Calculate Composting Pad Area

Pad width = 10 ft + primary windrow base + 10 ft. + secondary windrow base + 10 ft (See Table in step 2)

Pad width = 10 ft + _____ + 10 ft. + _____ + 10 ft =_____ ft

Compost Pad Area = _____ (Pad Length) x _____ (Pad Width) = _____ sq. ft.

5. Calculate annual sawdust requirements. (This assumes no reintroduction of finished compost to the primary windrow, however it is recommended that up to 50% of fresh sawdust requirements be met with finished compost.)

Cubic Yards Sawdust =_____ (lb loss / yr.) x 0.0069 = _____cu. yd. / yr.